

**REMARKS**

Claims 1-12 are all the claims pending in the application.

Claims 1-12 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Tsuchiya et al. (U.S. Patent No. 5,346,217; hereinafter “Tsuchiya”) in view of Motomiya (U.S. Patent No. 4,438,931; hereinafter “Motomiya”), Hoshi (U.S. Patent No. 5,205,560; hereinafter “Hoshi”) and Tsuchida (U.S. Patent No. 5,255,913; hereinafter “Tsuchida”).

Applicant submits that claims 1 and 7 are patentable because Tsuchiya, Motomiya, Hoshi and Tsuchida do not teach, suggest or provide motivation for, *inter alia*, a golf club head wherein and an intersection angle between the crown portion and the side portion is larger than 90 degrees.

Further, Applicant submits that claims 4 and 10 are patentable because Tsuchiya does not teach or suggest a golf club head wherein the metal forming the golf club head includes at least one of titanium and titanium alloy; wherein the crown portion and the at least part of the side portion have a Young’s modulus not higher than 10,500 kgf/mm<sup>2</sup>(approx. 103 GPa); and wherein the sole portion has a Young’s modulus not lower than 11,000 kgf/mm<sup>2</sup>.

In contrast, Tsuchiya discloses having the crown made of a first material having an elastic modulus of 210 GPa and the sole made of a second material having an elastic modulus in a range from 150 to 250 GPa, as recognized by the Examiner. *See* col. 6, lines 44-57.

In addition to the above arguments, Applicant submits that claims 1-12 are further patentable for the reasons submitted below.

In rejecting the claims, the Examiner alleges that the combination of Tsuchiya, Motomiya, Hoshi and Tsuchida discloses the hollow golf club head as recited in claim 1. The Examiner

relies primarily on Tsuchiya as supposedly disclosing a face portion, a sole portion, a side portion, and a crown portion as recited in the claim. The Examiner, however, concedes that Tsuchiya fails to disclose a crown portion and at least a part of the side portion having a Young's modulus lower than the face portion and the sole portion. *See* Page 3 of the Final Office Action of November 1, 2005. For these teachings, the Examiner relies on Tsuchida. *See id.* at 3.

Specifically, the Examiner relies on Tsuchida to state that it would have been obvious to one skilled in the art to modify the golf club head of Tsuchiya by essentially incorporating the crown portion 5 of Tsuchida.

In view of the following discussions, Applicant respectfully disagrees.

**I. Examiner Has Not Established A Prima Facie Case Of Obviousness:**

**A. Non-Hollow Golf Club Head of Tsuchida Teaches Away From Modifying Hollow Golf Club Head of Tsuchiya With Teachings of Tsuchida.**

Applicant respectfully submits that one skilled in the art would not modify the teachings of Tsuchiya directed to a hollow golf club head with the teachings of Tsuchida, a reference which is directed to a solid core golf club head.

In properly considering what a prior art teaches or suggests to one skilled in the art, “[a] prior art reference must be considered in its entirety, i.e., as a whole, *including portions that would lead away from the claimed invention.*” M.P.E.P. § 2141.02(IV)(emphasis added).

As previously pointed out by the Applicants, Tsuchiya teaches a golf club head having a hollow construction. *See* Tsuchiya at col. 4, lines 42-47.

In contrast, Tsuchida clearly discloses a golf club head having a non-hollow core. *See* Tsuchida at col. 2, lines 28-32. Further, Tsuchida recognized two types of shell-type golf club:

one having a cavity, i.e., hollow shell construction and another having a core inside a shell construction. *See* Response Under 37 C.F.R. 1.111 at page 2. In the subsequent detailed description of the preferred embodiments, Tsuchida clearly shows that its teachings are directed toward a golf club head that includes a core made of foam resin. *See id.*

Therefore, consideration of the teachings of Tsuchida in their entirety suggest the use of a non-hollow golf club head, which *teaches away* from having a hollow golf club head as taught by Tsuchiya. Therefore, one skilled in the art would not modify the hollow golf club head of Tsuchiya with the teachings of Tsuchida.

B. Substantial Increase Non-Hollow Golf Club Head of Tsuchida Teaches Away From Modifying Hollow Golf Club Head of Tsuchiya With Teachings of Tsuchida.

One skilled in the art would not combine the references in the manner suggested by the Examiner because the disclosure of Tsuchiya, for enlarging a sweet spot without any substantial increase in weight (col. 3, lines 44-48), *teaches away* from having a solid golf club head and the accompanying increase in weight. *See* Response Under 37 C.F.R. § 1.111 at pages 3-4.

Again, consideration of the entirety of the teachings of Tsuchiya and Tsuchida *teaches away* from modifying Tsuchiya with the teachings of Tsuchida.

C. Teachings Of Hoshi Teach Away From a Crown Portion and At Least a Part of Side Portion Having a Young's Modulus Lower Than Face Portion and Sole Portion.

Furthermore, one skilled in the art would not combine the teachings of Hoshi with the teachings of Tsuchiya and Tsuchida because Hoshi suggests the use of a single material for the

entire club head, i.e., suggests a club head having the same Young's modulus for all parts of the club head. *See* col. 2, lines 59-21.

Although the Examiner states that in Hoshi, "a distinct relationship has been acknowledged among the desired Young's modulus, the thickness of the crown, and the material chosen," Hoshi, nevertheless, suggests having a club head with a *uniform* Young's modulus, which teaches away from the crown portion and the at least a part of the side portion as recited in claim 1. *See id.*

**I. Conclusion:**

Applicant submits that the Examiner is attempting to arbitrarily combine a number of references which *teach away* from their combination as shown above. Therefore, one of ordinary skill in the art would *not* have combined the references as suggested by the Examiner.


In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

AMENDMENT UNDER 37 C.F.R. § 1.114(c)  
U.S. APPLN. NO.: 10/802,874

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The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Jeffrey A. Schmidt", written over a horizontal line.

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